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1945MANUFACTURE OF POTATO CHIPS

Potatoes should preferably be stored at a temperature between 40° to 50° F. in order that they may contain the least amount of sugar. When potatoes are stored at a temperature below 40° F. a certain amount of the starch turns to sugar and it takes a number of weeks, under proper conditions, to change it back again to starch. If stored above 50° sprouting may be flavored. It has been found that potatoes containing the least amount of sugar make the lightest colored and most attractive chip.

The potatoes should be sliced to about the thinness of a dime and washed and drained to remove ruptured starch cells. This step keeps the chips from becoming tough. The chips are then ready to fry in oil heated between 400° to 430° F. The temperature and drying time will vary according to the sugar content of the potatoes and the color of the chip best suited for the trade.

Investigations have shown that peanut oil is the best frying oil because it has a higher smoke point, it is less unsaturated than other oils, it gums up the machinery the least, and consequently the machine is more easily cleaned after continuous use. Also, the chip has less tendency to develop rancidity. Next in choice is corn oil, and then comes cottonseed oil. Any of the oils may be used if the chips are protected from light.

Transparent or water-clear bags should never be used for packaging such perishable products as potato chips. There is a certain yellow transparent cellulose bag which may be used in packaging oil-bearing products, since it is specially made to exclude ultra-violet, violet and blue light, which are notoriously active in developing rancidity in oil-bearing foods. A green bag, likewise available to the trade, has proven even better than the yellow bag, because it excludes all light except that in the green region, namely, 4900 to 5800 Angstrom units. Foil makes an excellent bag because it excludes all light, but is, perhaps, more expensive than the others. The appetizing taste of freshly fried potato chips is maintained for a longer period when attention is given to proper packaging, that is, to the exclusion of harmful light.

An excellent article entitled "The Making of Potato Chips in Relation to Some Chemical Properties of Potatoes", by Mabel C. Rogers, Charles F. Rogers, and Alice M. Child, may be found in the September, 1937 issue of the American Potato Journal, vol. 14, no. 9, p. 269. This journal most likely may be consulted in any comprehensive library.

There are a number of potato chip machines on the market. The following manufacturers of potato chip machines is only a partial list:

Automatic Cooking Machine Company, New Bedford, Mass.  
Star Manufacturing Co., Inc., 4569 Swan Avenue, St. Louis, Mo.  
Sullivan Machine Company, Toledo, Ohio  
Potato Chip King Corporation, 508 S. Sangamon St., Chicago, Ill.  
J. D. Ferry Co., So. Cameron Street, Harrisburg, Pa.



As of possible interest there is given below a partial list of manufacturers of potato peelers:

Josiah Anstice Co., Rochester, N. Y.

Hobart Manufacturing Co., Troy, Ohio.

American Kitchen Machines Corp., 1106 Vine St., Philadelphia, Pa.

The listing of the names of any of these manufacturers in no way implies that they are endorsed or recommended over other firms whose names are not given.

A not uncommon practice on the part of certain potato chip manufacturers is to slice the cleaned but unpeeled potato directly into hot oil. But the common practice is to clean the potato and peel before slicing and drying.

It is doubtful if any vitamins, other than B<sub>2</sub>, remain in the finished chip on account of the heat necessary to fry the potato slices. As a result of peeling, much of the minerals as well as the natural flavor of the potato is removed.

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